

**Amendments to the Claims:**

This listing of claims will replace all prior version, and listings, of claims in the application.

**Listing of Claims:**

1. (Currently Amended) A routing switch for use in a communications network, said network comprising routing switches interconnected by communication links, said routing switch comprising:

one or more transceivers for being connected to associated links to one or more other routing switches in neighboring nodes;

a switch fabric for routing information to and from said one or more transceivers;

and

one or more processors, said one or more processors for controlling said routing switch to:

monitor a message from a neighboring node identifying attributes of said neighboring node, wherein said routing switch further detects a quality of a link from said neighboring node, wherein said quality of said link is determined based upon received optical power;

detect a change in said message from a previous message so as to identify a change in attributes of said neighboring node, corresponding to a topology change in said network;

increment a session identifier, each said session identifier being associated with a different topology of said network; and

communicate to other nodes in said network said change in said topology by identifying an incremented session identifier along with information identifying said change in said topology of said network.

2. (Canceled)

3. (Currently Amended) A method performed by a communications network, said network comprising nodes interconnected by communication links, said method comprising:

monitoring by each node a message from a neighboring node identifying attributes of said neighboring node, comprising detecting a quality of a link from said neighboring node, wherein said quality of said link is determined based upon received optical power;

detecting by a first node a change in said message from a previous message so as to identify a change in attributes of said neighboring node, corresponding to a topology change in said network;

incrementing a session identifier, each said session identifier being associated with a different topology of said network; and

communicating to other nodes in said network said change in said topology by identifying an incremented session identifier along with information identifying said change in said topology of said network.

4. (Currently Amended) The routing switch of Claim 1 wherein said one or more processors for controlling said routing switch to monitor a message from a neighboring node comprises said one or more processors controlling said routing switch controls said routing

~~switch to detect said neighboring node's unique address.~~

5. (Canceled)

6. (Currently Amended) The routing switch of Claim 5 1 wherein said quality of said link is determined based on a bit error rate.

7. (Canceled)

8. (Currently Amended) The routing switch of Claim 1 wherein said one or more processors for controlling said routing switch to detect a change in said message from a previous message ~~comprises said one or more processors controlling said routing switch~~ controls said routing switch to detect that said neighboring node has an address different from a previous address of said neighboring node.

9. (Original) The routing switch of Claim 1 wherein said one or more processors for controlling said routing switch controls said routing switch to update a routing table within said routing switch based upon said topology change of said network.

10. (Original) The routing switch of Claim 1 wherein said change in said topology ~~comprises the addition or deletion of a node in the network.~~

11. (Original) The routing switch of Claim 1 wherein said one or more processors for controlling said routing switch controls said routing switch to store in memory information regarding the status of said neighboring node upon receiving a change in said session identifier.

12. (Original) The routing switch of Claim 11 wherein said information regarding the status of said neighboring node is replaced with new status information only after the topology has been stable for a threshold period of time.

13. – 15. (Canceled)

16. (Original) The method of Claim 3 wherein said monitoring by each node comprises detecting said neighboring node's unique address.

17. (Canceled)

18. (Currently Amended) The method of Claim 17 wherein said quality of said link is determined based on a bit error rate.

19. (Canceled)

20. (Original) The method of Claim 3 wherein said detecting a change in said message from a previous message comprises detecting that said neighboring node has an address

different from a previous address of said neighboring node.

21. (Original) The method of Claim 3 wherein said change in said topology comprises the addition of a node in the network.

22. (New) A routing switch for use in a communications network, said network comprising routing switches interconnected by communication links, said routing switch comprising:

one or more transceivers for being connected to associated links to one or more other routing switches in neighboring nodes;

a switch fabric for routing information to and from said one or more transceivers;

and

one or more processors, said one or more processors for controlling said routing switch to:

monitor a message from a neighboring node identifying attributes of said neighboring node, wherein said routing switch further detects a quality of a link from said neighboring node, wherein said quality of said link is determined based on a bit error rate;

detect a change in said message from a previous message so as to identify a change in attributes of said neighboring node, corresponding to a topology change in said network;

increment a session identifier, each said session identifier being associated with a different topology of said network; and

communicate to other nodes in said network said change in said topology by identifying an incremented session identifier along with information identifying said change in said topology of said network.

23. (New) A method performed by a communications network, said network comprising nodes interconnected by communication links, said method comprising:

monitoring by each node a message from a neighboring node identifying attributes of said neighboring node, comprising detecting a quality of a link from said neighboring node, wherein said quality of said link is determined based on a bit error rate;

detecting by a first node a change in said message from a previous message so as to identify a change in attributes of said neighboring node, corresponding to a topology change in said network;

incrementing a session identifier, each said session identifier being associated with a different topology of said network; and

communicating to other nodes in said network said change in said topology by identifying an incremented session identifier along with information identifying said change in said topology of said network.